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Supernumerary Tooth in Ectopic Position in the Mandible: Case Report

Daiana Arruda do Nascimento [1], Larisse Eduarda Nunes Sá [1,*], Maria Sarony Araújo Silva [1], Jaqueline Pernambuco Mororó [1], Karla Isabel Girón Martorell [1], Eduardo Ribeiro Sampaio [2], Samuel Rocha França [1], Josfran da Silva Ferreira Filho [3]

[1] Dentistry Program, IEducare Faculty - FIED, Tianguá, Ceará, Brazil.
[2] Dentistry Program, Federal University of Ceará, Fortaleza, Ceará, Brazil.
[3] Dentistry Program, Paulo Picanço Faculty, Fortaleza, Ceará, Brazil.

* Correspondence: daiana28a@gmail.com.

Abstract: Ectopic and impacted teeth represent distinct conditions that, when combined, can lead to significant complications, such as damage to adjacent structures. Supernumerary teeth can also cause functional and aesthetic alterations, primarily related to the eruption of permanent teeth. The diagnosis of these conditions requires a clinical and radiographic examination, as well as surgical planning. This article aims to report a clinical case of the surgical removal of an impacted supernumerary tooth, located in an inverted intraosseous position in the mandibular body near the basal cortical bone. A 15-year-old female patient was referred to the Oral and Maxillofacial Surgery and Traumatology service. Computed tomography revealed that the tooth was in continuity with the mandibular base and in close contact with the mental nerve. Surgery is often the treatment of choice to prevent complications such as mandibular fractures and cystic lesions. Each case should be planned individually, and the dental surgeon must be aware of the treatment options and complementary exams to ensure a safe and effective outcome for the patient.

Keywords: Impacted Tooth; Ectopic Tooth; Supernumerary Tooth; Tomography.

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1. Introduction

Ectopic teeth are organs that develop in an abnormal position in the dental arch [1]. Impacted teeth, on the other hand, are those that fail to erupt into the oral cavity, remaining retained within the tissues [2,3]. When a tooth presents both conditions simultaneously, i.e., ectopic and impacted, it can lead to various complications, causing damage to the surrounding tissues [3]. Odontogenesis is a complex and detailed process. Any alteration in its developmental stages may result in different types of dental anomalies, such as changes in structure, size, shape, or number of teeth, including supernumerary teeth [4]. Supernumerary teeth are extra teeth that develop in the oral cavity without a single established definition. They may be an isolated finding or part of a syndrome, often associated with heredity [5]. The presence of supernumerary teeth can cause functional and aesthetic alterations, leading to complications in the eruption of the permanent tooth in the affected area [6].

It is noteworthy that supernumerary teeth are more prevalent in permanent dentition than in primary dentition, with an incidence ranging from 0.15% to 3.8%, being more frequent in males than females [5,7]. Among patients with supernumerary teeth, 90% to 98%

are affected in the maxilla, particularly in the anterior region. Their occurrence in the mandible, in contrast, is considered rare [8,9]. The most commonly found supernumerary tooth is the mesiodens. It may appear as a single or multiple entity, either unilaterally or bilaterally. Morphologically, it is classified as conical, tuberculate, or molariform, with the conical type being the most prevalent [5].

Occlusal and periapical radiographs are crucial for diagnosing supernumerary teeth in the incisor region. Thus, each case is evaluated individually for appropriate treatment planning. Periapical, occlusal, and panoramic radiographs are routinely indicated in clinical practice, especially for patients presenting with numerical and positional dental disorders. Panoramic radiography is particularly useful as it provides, through a single projection, a comprehensive image of various anatomical structures [10]. The diagnosis of a supernumerary tooth is established through a clinical and radiographic approach. However, computed tomography has recently been introduced as a complementary diagnostic tool, offering precise and reliable localization of the supernumerary tooth [5,11].

The objective of this study is to report a clinical case of the surgical removal of an impacted, supernumerary, inverted intraosseous tooth located in the anterior mandibular region in a 15-year-old female patient diagnosed through routine radiographic examinations.

2. Case Report

A 15-year-old female patient, systemically healthy, with no known allergies and no pain complaints, was referred to the Oral and Maxillofacial Surgery and Traumatology service. Upon anamnesis and analysis of complementary radiographic examinations, an impacted supernumerary tooth was identified near the mandibular body and mental foramen. After reviewing the computed tomography scan (Figure 1), the tooth was found to be in an inverted intraosseous position, with disruption of the mandibular base.

During the surgical procedure, an open surgical technique was performed, aiming to preserve the mental nerve. The anesthetic protocol included 1 cartridge for inferior alveolar nerve block, 1 cartridge for mental nerve block, ¾ of a cartridge for lingual nerve block, and ¾ of a cartridge for buccal nerve block, using 2% lidocaine hydrochloride with 1:100,000 phenylephrine as the anesthetic agent. A quadrangular flap was created, and the tissues were dissected, carefully separating the periosteum surrounding the mental nerve. A mosquito clamp was used to preserve the neurovascular bundle, and the periosteum was released without major complications, maintaining the nerve integrity. The surgical site was irrigated with sterile saline solution, followed by osteotomy using a 702 surgical bur attached to a high-speed handpiece and extraction of the tooth (Figures 2A and 2B), which was associated with an odontoma. The transsurgical phase proceeded without complications.

Postoperative instructions included maintaining a soft diet in the initial days, with a preference for cold and chilled foods. Oral medication was prescribed as follows: amoxicillin 500 mg every 8 hours for 7 days, ibuprofen 600 mg every 8 hours for 3 days, and dipyrone 500 mg every 6 hours for 3 days. For external use, 0.12% chlorhexidine gluconate mouthwash was recommended, 10 mL for 1 minute, three times a day for 7 days, starting 24 hours after surgery. At the 7-day postoperative follow-up, the patient presented with mild transient paresthesia, for which Etna was prescribed at 2 tablets per day for 15 days. The patient reported complete resolution of symptoms after 21 days. At the 14-month postoperative follow-up, the patient reported no complaints, and a panoramic radiograph revealed satisfactory bone healing (Figure 3).

3. Discussion

In some situations, the presence of a supernumerary tooth may not cause complaints or pathological alterations. However, this anomaly is generally associated with issues

such as aesthetic changes, malocclusion, ectopic eruptions, and, in complex cases, the development of cysts and tumors [12]. In the present case, the ectopic eruption of the tooth in an inverted intraosseous position posed a risk of mandibular fracture due to the presence of the tooth in an area where only the cortical bone of the mandibular base should be.

Figure 1. Initial computed tomography used for planning the extraction of a supernumerary tooth located in the right mandibular body.

Figure 2. A. Immediate surgical site after tooth extraction. B. Extracted supernumerary tooth and associated odontoma.

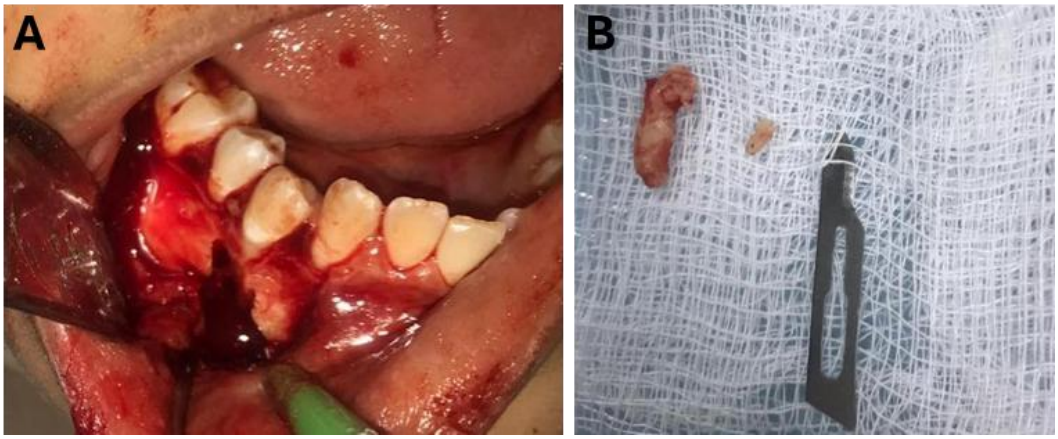
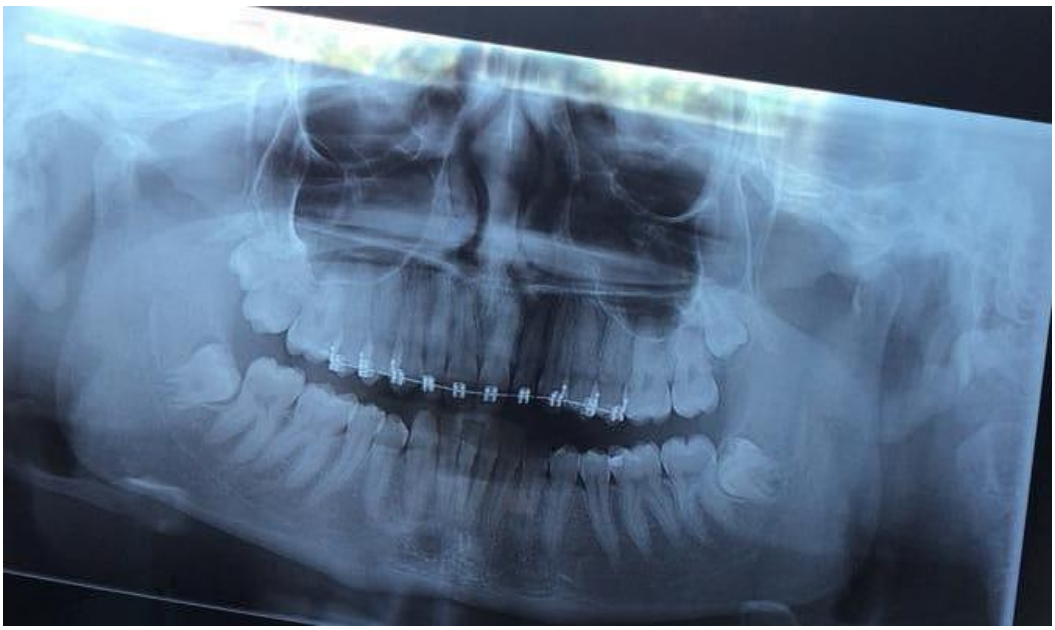


Figure 3. Control ultrasound post CVS. Reduced volume of amniotic fluid and evidence of retrognathism (arrow).



Most ectopic impacted teeth do not cause pain or discomfort during clinical examination and are typically identified through panoramic and periapical radiographs, depending on the affected area [13,14]. Imaging examinations are an essential tool in Dentistry, as they allow for a detailed evaluation of anatomical structures, significantly contributing to diagnostic accuracy [15].

In dental practice, the request for imaging examinations must consider their specific limitations. Panoramic radiography, for instance, presents challenges such as the two-dimensional reproduction of structures, overlapping anatomical elements, the presence of ghost images, and distortions inherent to the method [16]. On the other hand, three-dimensional images obtained through cone-beam computed tomography (CBCT) allow visualization of a region in three different planes (axial, coronal, and sagittal). This provides more realistic images, eliminates overlapping structures, and aids in the precise identification of impacted teeth, thereby enhancing diagnostic accuracy [17,18]. In this case, computed tomography proved to be of great importance for diagnosis and surgical planning.

The increase in the number of surgical procedures has been accompanied by a rise in complications and accidents, such as paresthesia [19]. According to Doh RM [20], paresthesia is defined as an alteration in cutaneous sensitivity, characterized by symptoms such as numbness, partial sensory perception reduction, burning, or tingling sensations. In the case of the inferior alveolar nerve (IAN), its occurrence varies between 0.35% and 8.4% of patients, with neurological symptoms that may last for a few days, weeks, or even several months. In the present case, the patient experienced transient paresthesia, which falls within the category of symptoms lasting only a few days, without leaving any sequelae.

In the literature, the widely accepted treatment for odontomas is surgical removal [21-23]. Both the supernumerary tooth and the odontoma were removed in the same surgical procedure, and the odontoma was not sent for histopathological analysis since its diagnosis is essentially clinical. Alternative treatment approaches were considered, but the use of 3D-printed models was ruled out, as there was no benefit that justified the cost concerning the preservation of the mental nerve.

4. Conclusion

Supernumerary teeth, especially when ectopic and impacted, represent clinical challenges that require precise diagnosis and careful surgical planning. Surgical removal, as demonstrated in this case report, is often necessary to prevent functional and structural complications, such as bone fractures and cystic lesions. The use of imaging examinations, particularly computed tomography, is essential for adequate planning and minimizing intra- and postoperative risks, although postoperative complications may still occur. The individualization of the therapeutic approach and long-term follow-up are fundamental to ensuring oral health and patient well-being.

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Conflicts of Interest: The authors declare no conflicts of interest.

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